

Practice: 313 - Waste Storage Facility**Scenario: #8 - Drystack,earthen floor,no wall****Scenario Description:**

This scenario consists of a dry stack facility with compacted earthen floor without side walls. This scenario is intended for dryer material such as poultry litter. The purpose of this practice is to properly store manure and other agricultural by-products until they can be hauled away from the site for proper disposal or utilization on land at agronomical rates. This scenario is applicable when geological, soil and climate conditions are appropriate for earth floors and are allowed by state and local regulations. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water.

Potential Associated practices: 342-Critical Area Planting, 362-Diversion, 561-Heavy Use Area Protection, 367-Roofs and Covers, 558-Roof Runoff Structure, 317-Composting Facility, 633-Waste Recycling, 634-Waste Transfer, 635-Vegetated Treatment Area

Before Situation:

Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers.

After Situation:

The typical is 4,000 SqFt (40' x 100'). The earthen floor will be prepared by stripping the top 1' of soil and roller compacting it back into floor. Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan.

Scenario Feature Measure: Square Foot Floor Area

Scenario Unit: Square Foot

Scenario Typical Size: 4,000

Scenario Cost: \$1,868.26

Scenario Cost/Unit: \$0.47

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Earthfill, Roller Compacted	49	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	\$3.54	148	\$523.92
Excavation, common earth, large equipment, 150 ft	1223	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.21	148	\$475.08
Mobilization						
Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$434.63	2	\$869.26

Practice: 313 - Waste Storage Facility**Scenario: #9 - Dry stack, earthen floor, wood or concrete wall****Scenario Description:**

This scenario consists of a dry stack facility with compacted earthen floor with wooden walls, posts and a concrete curb. This scenario is intended for dryer material such as poultry litter. The purpose of this practice is to properly store manure and other agricultural by-products until they can be hauled away from the site for proper disposal or utilization on land at agronomical rates. This scenario is applicable when geological, soil, and climate conditions are appropriate for earth floors and are allowed by state and local regulations. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water.

Potential Associated practices: 342-Critical Area Planting, 362-Diversion, 561-Heavy Use Area Protection, 367-Roofs and Covers, 558-Roof Runoff Structure, 317-Composting Facility, 633-Waste Recycling, 634-Waste Transfer, 635-Vegetated Treatment Area

Before Situation:

Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers.

After Situation:

Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan.

The typical is 4,000 SqFt (40' x 100'). The earthen floor will be prepared by stripping the top 1' of soil and roller compacting it back into floor. Walls are 5' pressure treated wood (2" x 8" boards), 6" x 6" x 8' posts set 4' c-c with 6" concrete curbing. Walls allow for greater storage volume. (Wood walls are 4.5' with 0.5' high concrete curbing.) Walls are along three sides of the facility (both short dimensions and one long dimension). Site preparation includes excavation and compaction of top 1' of material, setting posts, and installing curbing and wooden walls.

Scenario Feature Measure: Square Foot Floor Area

Scenario Unit: Square Foot

Scenario Typical Size: 4,000

Scenario Cost: \$9,007.68

Scenario Cost/Unit: \$2.25

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Auger, Post driver attachment	934	Auger or post driver attachment to a tractor or skidsteer. Does not include power unit. Labor not included.	Hour	\$7.38	12	\$88.56
Skidsteer, 80 HP	933	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$38.10	12	\$457.20
Concrete, CIP, formless, non reinforced	36	Non reinforced concrete cast-in-placed without forms by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$102.45	5.5	\$563.48
Earthfill, Roller Compacted	49	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	\$3.54	148	\$523.92
Excavation, common earth, large equipment, 150 ft	1223	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.21	148	\$475.08
Concrete, CIP, formed reinforced	38	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$323.69	2	\$647.38
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$18.98	90	\$1,708.20

Labor

Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$21.73	12	\$260.76
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Materials

Lumber, planks, posts and timbers, treated	1609	Treated dimension lumber with nominal thickness greater than 2". Includes lumber and fasteners. Does not include labor.	Board Foot	\$1.54	1104	\$1,700.16
Dimension Lumber, Treated	1044	Treated dimension lumber with nominal thickness equal or less than 2". Includes lumber and fasteners	Board Foot	\$0.83	1620	\$1,344.60

Mobilization

Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$434.63	2	\$869.26
Mobilization, very small equipment	1137	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$62.86	1	\$62.86
Mobilization, small equipment	1138	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$153.11	2	\$306.22

Practice: 313 - Waste Storage Facility**Scenario: #10 - Dry Stack, concrete floor, no wall****Scenario Description:**

This scenario consists of a dry stack facility with reinforced concrete floor without side walls. This scenario is applicable when geological, soil, climate conditions or state and local regulations prohibit the use of an earthen surface, and requires a hard working surface such as concrete. The purpose of this practice is to properly store manure and other agricultural by-products until they can be hauled away from the site for proper disposal or utilization on land at agronomical rates. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water.

Potential Associated practices: 342-Critical Area Planting, 362-Diversion, 561-Heavy Use Area Protection, 367-Roofs and Covers, 558-Roof Runoff Structure, 317-Composting Facility, 633-Waste Recycling, 634-Waste Transfer, 635-Vegetated Treatment Area

Before Situation:

Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers.

After Situation:

Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan.

The typical is 4,000 SqFt (40' x 100'). The facility floor is 5" reinforced concrete without side walls. Site preparation includes topsoil removal (0.5'), placement of compacted gravel (4"), and installing 5" of reinforced concrete.

Scenario Feature Measure: Square Foot Floor Area

Scenario Unit: Square Foot

Scenario Typical Size: 4,000

Scenario Cost: \$11,685.92

Scenario Cost/Unit: \$2.92

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Excavation, common earth, large equipment, 150 ft	1223	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.21	74	\$237.54
Concrete, CIP, slab on grade, reinforced	37	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$150.48	62	\$9,329.76
Materials						
Aggregate, Gravel, Graded	46	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$34.02	49.5	\$1,683.99
Mobilization						
Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$434.63	1	\$434.63

Practice: 313 - Waste Storage Facility**Scenario: #11 - Dry Stack, concrete floor, wood wall or concrete wall****Scenario Description:**

This scenario consists of a dry stack facility with reinforced concrete Floor with pressure treated wood walls. This scenario is intended for situations where consistency of manure or geographical conditions prohibit earthen floors. The purpose of this practice is to temporarily, properly store manure and other agricultural by-products until they can be hauled away from the site for proper disposal or utilization on land at agronomical rates. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water.

Potential Associated practices: 342-Critical Area Planting, 362-Diversion, 561-Heavy Use Area Protection, 367-Roofs and Covers, 558-Roof Runoff Structure, 317-Composting Facility, 633-Waste Recycling, 634-Waste Transfer, 635-Vegetated Treatment Area

Before Situation:

Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers.

After Situation:

The typical is 4,000 SqFt (40' x 100'). The facility floor is 5" reinforced concrete with 5' pressure treated wood (2" x 8" boards) walls, 6" x 6" x 8' posts set 4' c-c with 6" concrete curbing. Walls allow for greater storage volume. Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan.

Scenario Feature Measure: Square Foot Floor Area

Scenario Unit: Square Foot

Scenario Typical Size: 4,000

Scenario Cost: \$14,943.43

Scenario Cost/Unit: \$3.74

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Excavation, common earth, large equipment, 150 ft	1223	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.21	74	\$237.54
Concrete, CIP, slab on grade, reinforced	37	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$150.48	62	\$9,329.76
Concrete, CIP, formed reinforced	38	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$323.69	2	\$647.38
Materials						
Dimension Lumber, Treated	1044	Treated dimension lumber with nominal thickness equal or less than 2". Includes lumber and fasteners	Board Foot	\$0.83	1620	\$1,344.60
Lumber, planks, posts and timbers, treated	1609	Treated dimension lumber with nominal thickness greater than 2". Includes lumber and fasteners. Does not include labor.	Board Foot	\$1.54	1104	\$1,700.16
Aggregate, Gravel, Graded	46	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$34.02	49.5	\$1,683.99

Practice: 313 - Waste Storage Facility**Scenario: #19 - Composted Bedded Pack, Earthen Floor, Concrete Wall****Scenario Description:**

A composted bedded pack facility is constructed to store wastes as part of an agricultural waste management system. This practice will address soil and water quality by reducing the pollution potential for surface water and groundwater quality degradation.

Potential Associated Practices: Fence (382), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), and Roofs and Covers (367).

Before Situation:

Operator presently has a confined animal feeding operation without a waste management system adequate to handle the waste stream leaving the animal production facilities. Manure and other agricultural waste by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources.

After Situation:

Using a bedded pack provides an environmentally safe facility for storing manure and other agricultural waste by-products. This facility provides the landowner a means of storing waste until it can be utilized in a proper manner in accordance with a nutrient management plan.

Typical design: floor area 4,000 ft², (40' X 100'); 4' concrete wall height, 3' footing depth with an earthen floor; 20' openings on each end of structure.

Scenario Feature Measure: Square Foot Floor Area

Scenario Unit: Square Foot

Scenario Typical Size: 4,000

Scenario Cost: \$13,910.04

Scenario Cost/Unit: \$3.48

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Excavation, common earth, large equipment, 150 ft	1223	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.21	74	\$237.54
Stripping and stockpiling, topsoil	1199	Stripping and stockpiling of topsoil adjacent to stripping area. Includes equipment and labor.	Cubic Yard	\$0.76	102	\$77.52
Concrete, CIP, formed reinforced	38	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$323.69	42	\$13,594.98

Practice: 313 - Waste Storage Facility**Scenario: #20 - Composted Bedded Pack, Concrete Floor, Concrete Wall****Scenario Description:**

A composted bedded pack facility is constructed to store wastes such as manure, wastewater, and contaminated runoff as part of an agricultural waste management system. This scenario is intended for situations where consistency of manure or geological conditions prohibit the use of earthen floors. This practice will address soil and water quality by reducing the pollution potential for surface water and groundwater quality degradation.

Potential Associated Practices: Fence (382), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561) and Roofs and Covers (367).

Before Situation:

Operator presently has a confined animal feeding operation without a waste management system adequate to handle the waste stream leaving the animal production facilities. Manure and other agricultural waste by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or are being transported but not properly utilized or disposed of. This situation poses an environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources.

After Situation:

Using a bedded pack provides an environmentally safe facility for storing manure and other agricultural waste by-products. This facility provides the landowner a means of storing waste until it can be utilized in a proper manner in accordance with a nutrient management plan.

Typical design: floor area 4,000 ft², (40' X 100'); 4' concrete wall height, 3' footing depth with a 6" concrete floor; 20' openings on each end of structure.

Scenario Feature Measure: Square Foot Floor Area

Scenario Unit: Square Foot

Scenario Typical Size: 4,000

Scenario Cost: \$26,746.56

Scenario Cost/Unit: \$6.69

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Concrete, CIP, formed reinforced	38	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$323.69	42	\$13,594.98
Concrete, CIP, slab on grade, reinforced	37	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$150.48	74	\$11,135.52
Excavation, common earth, large equipment, 150 ft	1223	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	\$3.21	74	\$237.54
Stripping and stockpiling, topsoil	1199	Stripping and stockpiling of topsoil adjacent to stripping area. Includes equipment and labor.	Cubic Yard	\$0.76	102	\$77.52
Materials						
Aggregate, Gravel, Graded	46	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$34.02	50	\$1,701.00